What Is Claimed Is:

1. A tunneling method using a pre-support member and a post-support member, comprising:

excavating a pilot tunnel in a main tunnel;

forming a drilled hole from an excavation surface during a step excavation by a designed advance length of the main tunnel at a plurality of locations in the pilot tunnel to install the pre-support member;

inserting the internal pre-support member into the drilled hole, and conducting grouting and performing curing to fix the internal pre-support member;

excavating the tunnel in stages in a longitudinal direction along an excavation line of the main tunnel and primarily spraying shotcrete;

installing a post-support member between a plurality of internal pre-support members in the excavation surface to which the shotcrete is primarily sprayed; and

connecting the internal pre-support member and the post-support member with a plate type support member.

2. The tunneling method of claim 1, wherein in the installing of the post-support member between the plurality of internal pre-support members in the excavation surface to which the shotcrete is primarily sprayed, the post-support member is installed between the pre-support members in a ceiling part of a tunnel, and in side wall parts of a tunnel, only the post-support member is installed.

3. The tunneling method of claim 1 or 2, further comprising:

eccentrically disposing and excavating the pilot tunnel in the main tunnel so that a planned excavation surface of the main tunnel and the excavation surface of the pilot tunnel are spaced apart from each other as much as possible and performing a support process to secure structural safety, when there is an obstruction adjacent to an original ground close to the excavation surface of the main tunnel;

installing the internal pre-support member in the original ground of the main tunnel from the pilot tunnel that is eccentrically installed; and

installing the post-support member between the plurality of internal pre-support members in the excavation surface of the main tunnel to which the shotcrete is primarily sprayed after excavating the main tunnel.

4. The tunneling method of claim 1 or 2, wherein in inserting and installing the internal pre-support member in the drilled hole, the internal pre-support member is mounted with a stopper for preventing slip in the drilled hole, an injection hose are bound to a side surface of the internal pre-support member, a packer for pressurized-grouting is mounted at a tip end of the internal pre-support member of the inner side of the tunnel, drilling the hole for the internal pre-support member in the original ground of the main tunnel from the pilot tunnel, the internal pre-support member is inserted into the pilot tunnel by connecting a connection pipe to the internal pre-support member so that an end part of the internal pre-support member is partially exposed to be connected to the plate type support member at a planned excavation surface of the main tunnel, and then the connection pipe is removed,

and the packer is expanded to conduct the grouting and perform curing to thereby connect the internal pre-support member with the plate type support member.

5. A tunneling method using a pre-support member and a post-support member, comprising:

installing external pre-support members from a ground surface toward a cross section and outer side parts of the cross section of a main tunnel at a plurality of locations in advance length before excavating the tunnel, if the pre-support member is installed toward a planned cross section of the main tunnel at the outside of the tunnel by approaching the ground surface;

excavating a cross section of the main tunnel and primarily spraying shotcrete to an excavation surface of the main tunnel in the main tunnel;

installing a post-support member between the plurality of external pre-support members in the excavation surface of the main tunnel to which the shotcrete is primarily sprayed in the main tunnel; and

connecting the external pre-support member and the post-support member with a plate type support member.

6. The tunneling method of claim 5, wherein in the installing of the external pre-support members from the ground surface toward the cross section and the outer side parts of the cross section of the main tunnel, vertical side wall reinforcing external pre-support members installed at outer sides of left and right side wall parts of the tunnel are installed deeper than a level of a bottom of the tunnel so as to prevent uplift of the bottom.

7. The tunneling method of claim 5, wherein in the installing of the post-support member between the external pre-support members in the excavation surface of the tunnel, the post-support member is installed in a part unsupported due to an obstruction, in a case in which the external pre-support members are not sufficiently installed in an upper ground of the cross section of the main tunnel due to the obstruction.

8. The tunneling method of claim 1 or 5, further comprising:

after the installing of the post-support member between the plurality of pre-support members in the excavation surface of the main tunnel to which the shotcrete is primarily sprayed in the main tunnel, continuously installing a trust plate on the pre-support member and the post-support member, and putting a bearing plate on the pre-support member penetrating through the trust plate and tightening an anchorage to compress and fix the trust plate; and

spraying the shotcrete to the trust plate.

9. The tunneling method of claim 1 or 5, further comprising:

excavating along an excavation line of the main tunnel and installing a drainage member on the excavation surface; and

primarily spraying the shotcrete to the excavation surface installed the drainage member.

10. The tunneling method of claim 1 or 5, wherein the pre-support member and the post-support member are fixed to

the original ground of the main tunnel by inserting the pre-support member after drilling a hole, and then conducting pressurized-grouting to simultaneously generate an effect of supporting the original ground and a waterproof effect.

11. The tunneling method of claim 5, wherein a soil cover depth is replaced with an artificial reinforcement material and the external pre-support member is installed from the replaced soil cover depth to the cross section of the main tunnel and the outer side of the cross section of the main tunnel, in a case in which a soil cover depth of the main tunnel is thin and the ground of the main tunnel is soft.

12. The trust plate described in claim 8, The width of the truss plate is manufactured in accordance with a one-time advance length in the longitudinal direction, the transverse length is divided according to whether the ground is stable or not, The divided portions are formed in a structure capable of mutual connection, The upper and lower reinforcing rods are arranged in a truss shape at longitudinally spaced intervals. The upper and lower reinforcing rods are longitudinally welded to the reinforcing rods in the transverse direction, and the upper and lower reinforcing rods are reinforced in a truss- Truss plate made by welding.